

Appl. No. 09/831,371  
Amendment dated: June 30, 2004  
Reply to OA of: March 2, 2004

### **REMARKS**

Applicants have amended the claims in order to more particularly define the invention taking into consideration the outstanding Official Action. Claim 2 has been amended to more particularly define the invention and distinguish over the prior art. The Examiner has asserted that the unamended claim 2 is ungrammatical. It is believed that the amendment to claim 2, as discussed infra, obviates the rejection of this claim under 35 USC 112. Accordingly, it is most respectfully requested that this rejection be withdrawn

Withdrawn claim 12 has been canceled from the application without prejudice or disclaimer. In addition, claim 13 has been canceled from the application since claim 13 is dependent upon canceled claim 12. The claims now remaining in the application are claims 2, 4-9, 11 and 14-16. Applicants most respectfully submit that all the claims now present in the application are in full compliance with 35 U.S.C. §112 and are clearly patentable over the references of record.

The rejection of claims 2, 4-9, 11 and 13-16 under 35 U.S.C. 103(a) as being unpatentable over WO 98/33891 in view of WO 89/04168 has been carefully considered but is most respectfully traversed.

Applicants wish to direct the Examiner's attention to the basic requirements of a prima facie case of obviousness as set forth in the MPEP § 2143. This section states that to establish a prima facie case of obviousness, three basic criteria first must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

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Section 2143.03 states that all claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

Applicants most respectfully submit that WO98/33891 teaches a method for producing selected populations of lymphocytes. The consistent references in this document to the production of lymphocytes from a "patient" makes it clear to one skilled in the art that the person to be treated by the selected lymphocytes is not one who is "non-diseased" (cf. current claim 2).

For example, page 12, lines 16-18, state that:

"The availability of such cell populations allows for not only for the complete reconstitution of the depleted, defective or missing lymphocyte population in a **patient**, ...".

Page 12, lines 25-26, state that:

"The starting cell population may be, for example, a sample of **patient's** blood ...".

Furthermore, page 16, lines 18-26, state that:

"An added advantage of the invention is the inherent purging of tumour cells during cell expansion ... The purging of tumour cells during expansion ... Expanded cell populations can also be used to **treat patients** purged of a hematological malignancy or solid tumour".

The above sentences clearly show that the lymphocyte populations that are produced in WO98/33891 are produced from **diseased patients** as would be appreciated by one of ordinary skill in the art.

Thus it is most respectfully submitted that the Examiner is entirely correct when he states that:

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" [WO98/33891] does not teach the preparation of the lymphocytes from the host organism before the development of disease (uncompromised)" (Detailed Action, page 2).

WO98/33891 is only concerned with transplantation therapy in which cells are taken from **diseased patients**. This document does not teach or suggest the therapy of individuals with their own, healthy cells which were previously harvested from the individual when **non-diseased**.

Furthermore, WO98/33891 does not disclose the specific advantages of the current application, for example, the avoidance of the need to "clean" the cells prior to transplantation in order to remove the contaminating diseased elements (e.g. tumour cells).

A key advantage of the present invention is that specific cells are harvested at a time when the host is non-diseased, and returned to the same individual at a later date to treat that individual for a disease or disorder which has manifested itself in the meantime. This is a key concept underlying the present invention and without any recognition of this concept in the cited prior art document, it cannot be said that there is any teaching in it towards the claimed invention. The necessary motivation is missing from the prior art and Applicants' specification cannot be relied for this motivation. In re Fritch, 23 USPQ 1780, 1784(Fed Cir. 1992) ("It is impermissible to engage in hindsight reconstruction of the claimed invention, using the applicant's structure as a template and selecting elements from references to fill the gaps.).

#### **The disclosures of WO89/04168**

WO89/04168 discloses the isolation and preservation of foetal and neonatal haematopoietic stem cells and progenitor cells from blood.

One key difference between the subject matter of the current claims and that of WO89/04168 is the reference to "**mature**, healthy lymphocytes" in the current claims (claim limitations) as opposed to neonatal haematopoietic stem and progenitor cells in WO89/04168. In WO89/04168, specific reference is made to the fact that:

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"it is proper to infer that younger (neonatal) cells are preferable for hematopoietic reconstitution. Such neonatal or fetal cells have not been subjected to the "environmental outrage" that adult cells have undergone" (page 22, lines 19-23); and that

"Many of the relative disadvantages discussed supra of the use of bone marrow cells for hematopoietic reconstitution, also apply to the use of adult peripheral blood for such reconstitution, and **thus the use of neonatal cells** for hematopoietic reconstitution according to the present invention **provides distinct advantages over the employment of adult peripheral blood**" (page 22, line 31, to page 23, line 2).

Thus it can be seen that there are clear teachings in WO89/04168 **away** from the use of cells other than those derived from foetuses or neonates.

In direct contrast, the text of the current application specifically excludes foetal and neonatal host organisms:

Fetal host organisms are thus excluded from the present invention and the sampling of foetal cells is not encompassed" (page 11, line 36, to page 12, line 2); and "Thus, when blood samples are used, it is advantageous that they are taken from an individual with a **mature** immune system (ie. not foetal or neonatal)" (page 12, lines 17-20).

It can therefore be seen that WO89/04168 points the person skilled in the art in a direction which is **significantly different** from the subject matter of the claims of the current application. The limitation of the current claims to:

"... a host cell population of **mature, healthy** lymphocyte cells ..."

thus ensures that the claims of this application do not encompass foetal and neonatal host organisms; and, as can be seen from the above comments, the teachings of WO89/04168 are directed only towards the latter organisms.

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**The disclosures of WO98/33891 in view of WO89/04168**

The Official Action has asserted that the pending claims are unpatentable under U.S.C. 103(a) over WO98/33891 in view of WO89/04168. In particular, the Official Action asserts that:

"One of ordinary skill in the art at the time the invention was made would have been motivated to prepare and store adult lymphocytes because neonatal lymphocytes (including umbilical cord cells) are available only for a very short period of time (at birth) whereas adult cells might be obtained and stored anytime before the development of a disease for which they might become a valuable therapeutic tool".

It has been shown above, however, that there are clear teachings in WO89/04168 **against** the use of adult "mature, healthy lymphocyte cells" since these will have been subjected to an "environmental outrage". Furthermore, WO89/04168 states that there are "**distinct advantages**" of the use of **neonatal** cells "over the employment of adult peripheral blood" cells. These are teachings that the skilled person would not ignore. The authors of WO89/04168 would of course have been well aware of the fact that neonatal lymphocytes are only available for a short time period but despite this the authors WO89/04168 are adamant about the advantages of the use of **neonatal** lymphocytes over adult cells.

Thus it can be seen that the skilled person would **not** have been motivated to prepare and store **adult** lymphocytes from a **healthy** host organism since to do so would go **directly against** the teachings of WO89/04168.

Consequently, the skilled person would not have combined the disclosures of WO98/33891 with those of WO89/04168 and arrived at the claimed invention. Thus the Applicants respectfully assert that the subject matter of the current claims is indeed patentable under U.S.C. 103(a). Accordingly, it is most respectfully requested that this rejection be withdrawn.

The rejection of claims 2, 4-9, 11 and 13-16 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the

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subject matter which applicant regards as the invention has been carefully considered but is most respectfully traversed.

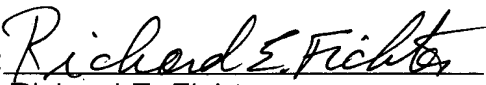
The Examiner has asserted that current claim 2 is ungrammatical. The claim amendments referred to above address this issue and it is believed that the amendments hereto obviate the rejection. Accordingly, it is most respectfully requested that this rejection be withdrawn.

Applicants acknowledge the indication that the Examiner has not received all of the references previously filed with the USPTO and receipt of which is acknowledged by the USPTO. In an effort to advance the prosecution of this application and to have the references made of record, yet further copies the references, already filed at the USPTO but missing from the application file, are being submitted herewith and are cited on Form 1449. Applicants request acknowledgment in the next Official Action that these references have been received and considered and have been made of record.

In view of the above comments and further amendments to the claims, favorable reconsideration and allowance of all of the claims now present in the application are most respectfully requested.

Respectfully submitted,

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